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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/634,338	08/04/2003	Michael Frank	PIX-P-053	6762

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PATENT LAW GROUP LLP  
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EXAMINER

GILES, NICHOLAS G

ART UNIT PAPER NUMBER

2622

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/634,338

Applicant(s)

FRANK, MICHAEL

Examiner

Nicholas G. Giles

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### ***Specification***

2. The disclosure is objected to because of the following informalities: There are places in the specification that aren't filled in that require application or patent numbers.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogata et al. (U.S. Patent No. 6,753,910).

Regarding claim 1, Ogata et al. discloses:

A digital imaging system, comprising: an image sensor comprising a two-dimensional array of pixel elements, said image sensor outputting digital signals on a pixel bus as pixel data representing an image of a scene (4:22-5:7, 5:45-5:50); an interface circuit couple to receive said pixel data from said pixel bus (Figs. 5 & 9, 6:32-57, and 9:30-10:13); where said interface circuit comprises a noise reduction circuit performing signal processing on said pixel data received on said pixel bus for noise reduction (6:32-57 and 9:30-10:13, the smoothing is the noise reduction).

Ogata et al. is silent with regards to a frame buffer storing the pixel data and an image processor processing the pixel data to generate image data for display. Official Notice is taken that it was well known at the time the invention was made to process pixel data for display purposes. An advantage of doing so allows a user to view the images he/she is capturing in order to verify the desired scene. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Ogata's system include a frame buffer storing the pixel data and an image processor processing the pixel data to generate image data for display.

Regarding claim 2, see the rejection of claim 1 and note that Ogata et al. further discloses:

Noise reduction circuit performs an infinite impulse filtering operations using a fixed blending coefficient (6:32-42).

Regarding claim 3, see the rejection of claim 2 and note that Ogata et al. further discloses:

Noise reduction circuit performs said infinite impulse filtering operation by averaging multiple number of frames of pixel data provided by said image sensor using said fixed blending coefficient (6:32-57 and 9:30-10:13).

Regarding claim 4, see the rejection of claim 3 and note that Ogata et al. further discloses:

Noise reduction circuit calculates new pixel data for each frame of pixel data received using the equation:  $\text{new data} = \alpha * \text{input data} + (1 - \alpha) * \text{old data}$ , where "new data" represents the final pixel data, "input data" represents the pixel data of the current frame to be averaged, "old data" represents the pixels data previously averaged, and " $\alpha$ " represents said fixed blending coefficient (6:32-57).

Regarding claim 5, see the rejection of claim 1 and note that Ogata et al. further discloses:

Noise reduction circuit performs a multisample averaging operation using a data and exposure time dependent blending coefficient (6:32-57 and 9:30-10:13, the process uses a normal exposure and short exposure).

Regarding claim 6, see the rejection of claim 5 and note that Ogata et al. further discloses:

Noise reduction circuit performs said multisample averaging operation by averaging multiple reads of the same frame of pixel data

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provided by said image sensor and applying said data and exposure time dependent blending coefficient (6:32-57 and 9:30-10:13).

Regarding claim 7, see the rejection of claim 6 and note that Ogata et al. further discloses:

Noise reduction circuit calculates new pixel data for each frame of pixel data received using the equation:  $\text{new data} = \alpha * \text{input data} + (1 - \alpha) * \text{old data}$ , where "new data" represents the final pixel data, "input data" represents the pixel data of a current frame to be averaged, "old data" represents the pixels data previously averaged, and " $\alpha$ " represents said data and exposure time dependent blending coefficient (6:32-57).

Regarding claim 8, see the rejection of claim 7 and note that Ogata et al. further discloses:

Noise reduction circuit receives previously averaged pixel data to obtain data dependent blending coefficient for averaging said current pixel data (6:32-57 and 9:30-10:13).

Ogata et al. is silent with regards to the function used for obtaining the coefficient being storing in a lookup table instead. Official Notice is taken that it was well known at the time the invention was made to store functions in tables instead. An advantage to doing so is that computations don't have to be made during processing in hardware and software thus simplifying the hardware and software requirements. For this reason it would have been obvious to one of ordinary skill in the art at the time the invention was

made to have Ogata's system include to the function used for obtaining the coefficient being storing in a lookup table instead.

***Allowable Subject Matter***

5. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 9, no prior art could be located that teaches or fairly suggests using a blending coefficient lookup table that uses a total exposure time index value to index the table for obtaining an exposure time dependent blending coefficient for averaging the current frame of pixel data in combination with the rest of the limitations of the claim.

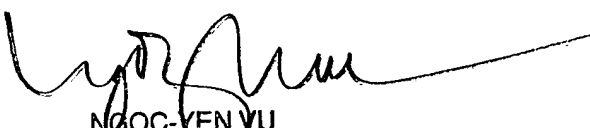
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas G. Giles whose telephone number is (571) 272-2824. The examiner can normally be reached on Monday through Friday from 7:30am to 4:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc - Yen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NGG

  
NGOC-YEN YU  
SUPERVISORY PATENT EXAMINER